SHERWIN-WILLIAMS

SAVE-LITE

FACTS ABOUT WHITE PAINT AND BETTER ILLUMINATION

SHERWIN-WILLIAMS SAVE-LITE WHITE

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SHERWIN-WILLIAMS PAINTS

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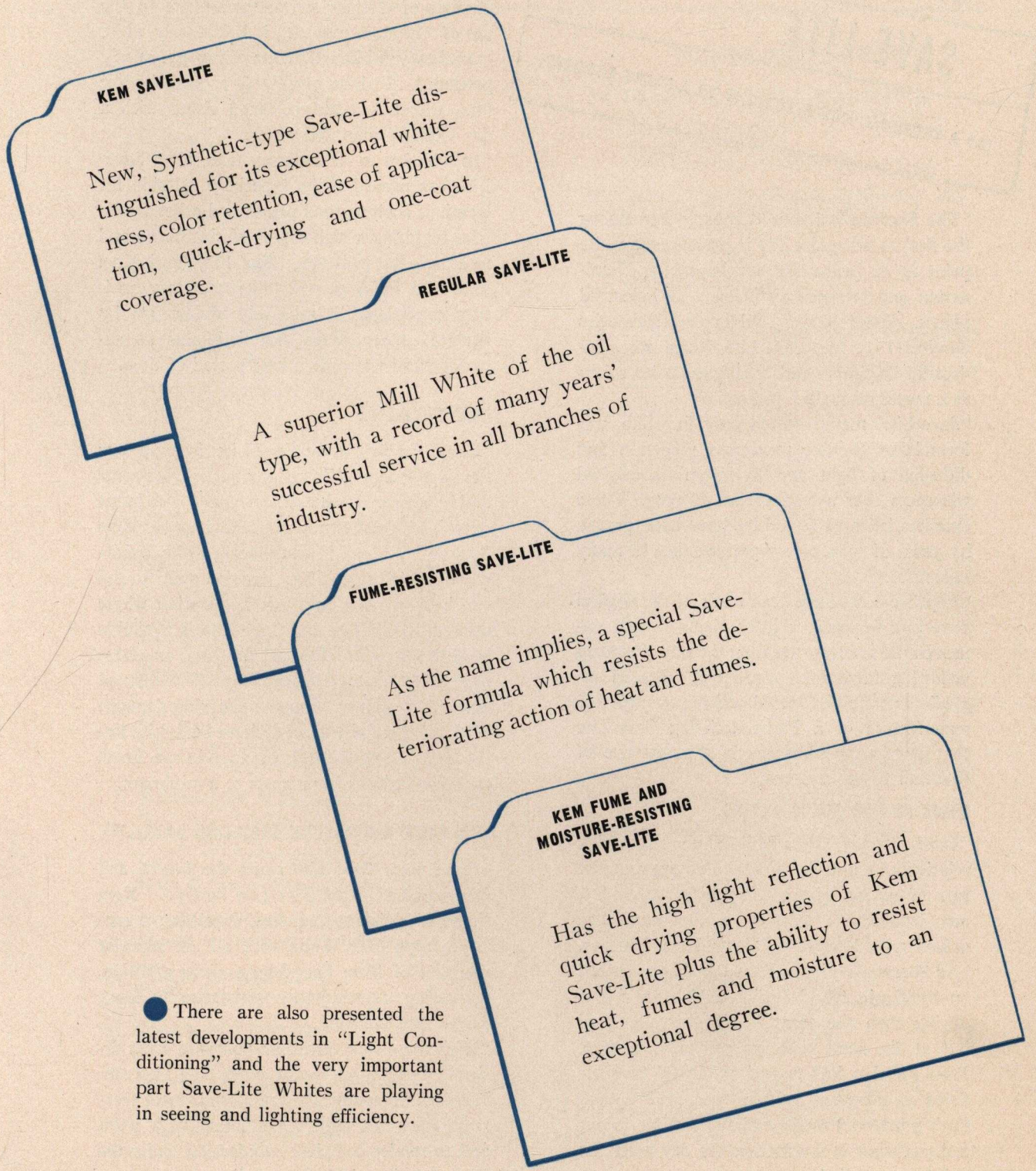
THIS is the engineering story of Save-Lite White developed in The Sherwin-Williams Research Laboratories to meet the requirements of industry for a whiter and more durable mill white finish for walls, ceilings and structural steel in industrial plants.


KEM SAVE-LITE
New, Synthetic-type Save-Lite distinguished for its exceptional whiteness, color retention, ease of application, quick-drying and one-coat coverage.
REGULAR SAVE-LITE
A superior Mill White of the oil type, with a record of many years' successful service in all branches of industry.
FUME-RESISTING SAVE-LITE
As the name implies, a special Save-Lite formula which resists the deteriorating action of heat and fumes.
KEM FUME AND MOISTURE-RESISTING SAVE-LITE
Has the high light reflection and quick drying properties of Kem Save-Lite plus the ability to resist heat, fumes and moisture to an exceptional degree.

There are also presented the latest developments in "Light Conditioning" and the very important part Save-Lite Whites are playing in seeing and lighting efficiency.

THE SHERWIN-WILLIAMS COMPANY, CLEVELAND, OHIO

THE STORY OF SAVE-LITE

(AS A TECHNICAL MAN REPORTS IT TO A PLANT ENGINEER)

"The Sherwin-Williams Company was among the first to recognize the importance of white paint as an instrument for improving illumination and increasing efficiency in industrial plants. When Sherwin-Williams' laboratories developed the first Save-Lite White, most Industrial Engineers still considered paint solely as a means of surface protection.

"Save-Lite, manufactured only in white, was formulated to give maximum reflection and diffusion of light and to retain its original whiteness over a long period of time. These characteristics of Save-Lite have been proven by years of satisfactory performance in many industries.

"Improvements have been made in the original Save-Lite formula. Whiter pigments and improved processes for treating the oils to control yellowing have been developed. Special ingredients were discovered making possible the manufacture of a Fume-Resisting Save-Lite that retains its whiteness in the presence of chemical fumes and heat.

QUICK DRYING ALKYD RESINS

"Until recently, Gloss Mill Whites required a relatively long drying period. To improve the rate of drying without sacrificing durability, our laboratories turned to the experience gained with Sherwin-Williams Kem Finishes.

"All Sherwin-Williams Kem Finishes are based on Synthetic Alkyd Resins, which are faster drying than the treated oils generally used but at the same time exceptionally durable. Kem Finishes had proved successful in other fields — why not a Kem type Mill White? Such a material would make it possible to put a department in production the day after the paint was applied.

PROVED IN LABORATORY AND PLANT

"Laboratory and actual application tests proved this could be done and gave us the basis for a new rapid-drying Save-Lite known as 'KEM SAVE-LITE'. This material has a number of distinct advantages. Due to the use of Titanium pigment, it is intensely white —probably whiter than anything previously produced. It dries quickly to a hard tile-like film, which is readily cleaned either with a dry cloth or soap and water.

"In addition to its ordinary uses, Kem Save-Lite has proved to be especially suitable for locations such as food plants and other industries requiring a high degree of cleanliness and resistance to moisture. The full, hard Kem Save-Lite finish provides the necessary sanitary conditions; is relatively undamaged by surface condensation; and maintains its superior whiteness over a long period of time.

KEM SAVE-LITE

"Since the first Kem Save-Lite formula was developed, a number of important refinements and improvements have been made. The latest development, known in our laboratory as Kem Save-Lite No. 46, is a brilliantly white, quick-drying finish which has superior opacity and can be used as a one-coat application where desired. This beautiful Save-Lite is available in both Gloss and Eg-Shel finishes. In either form, it is readily cleaned and will withstand repeated washings without noticeable damage. With all these advantages, Kem Save-Lite has the ease of application of an oil-type finish and thus reduces labor costs to a minimum.

KEM FUME & MOISTURE RESISTING SAVE-LITE

"From Kem Save-Lite came the fourth and final member of the Save-Lite family — Kem Fume & Moisture Resisting Save-Lite, a synthetic type Mill White with all the superior qualities of Kem Save-Lite and, in addition, possessing extraordinary resistance to heat, fumes, and moisture.

"With these four Save-Lite products, each designed to fit a particular need, The Sherwin-Williams Company is in a position to meet every requirement of light conditioning with paint and to render complete satisfaction under the most exacting circumstances."

FACTS ON LIGHT CONDITIONING AND BETTER ILLUMINATION

Great progress has been made within the past few years toward improving seeing conditions in all branches of industry. Plant engineers and company executives have become keenly interested in lighting problems, conscious of the important part adequate lighting plays in increasing production efficiency and maintaining worker morale.

Certain fundamental facts regarding illumination are important for a proper understanding of the problem. The few facts set forth below are basic and serve to illustrate the close relationship between good lighting and properly painted walls and ceiling surfaces.

HOW DOES PAINT AFFECT ILLUMINATION?

Ceiling and wall surfaces are a part of every lighting system. They are important reflectors of both daylight and artificial light. How efficiently they perform this function depends upon the reflection value of the paint applied to them and how well that paint maintains its original reflecting power.

WHAT IS LIGHT REFLECTION?

It is simply the turning back of light which strikes a wall, ceiling or other object. Dark colored or soiled surfaces tend to absorb rather than reflect light. Hence Black has a reflection value of only 2%. Kem Save-Lite White reflects over 85% of the light . . . actually more than many silvered mirrors.

FUNDAMENTALS OF LIGHTING

There are certain fundamental requirements of good lighting. They are: (1) Adequate intensity or quantity of light for the work to be done; (2) a general lighting level over the whole area sufficient to avoid strong contrasts in illumination; (3) a uniformly diffused light, free from glare.

The proper use of paint on walls and ceilings can be an important factor in fulfilling each of these requirements.

WHITE PAINT INCREASES THE QUANTITY OF LIGHT

The quantity of light in a room depends to a great extent upon the light reflection value of the paint on walls and ceilings. If a substantial part of the light striking a painted surface is reflected as is the case with white paint, the general illumination of the room is increased. If the light is absorbed, loss of light is inevitable.

MAINTAINING THE GENERAL LEVEL OF ILLUMINATION

Where light is improperly distributed, deep shadows contrast strongly with bright areas. Each time the worker looks up from a brightly lighted area into dark surroundings, his eyes must adjust themselves to the difference in lighting intensity. This constant adjustment causes eye strain and fatigue.

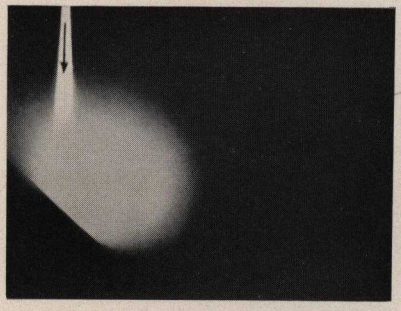
The use of white paint, which eliminates the darker areas, greatly improves the uniformity of general illumination and overcomes this common cause of eye strain.

THE VALUE OF UNIFORMLY DIFFUSED LIGHT

When light is reflected equally in all directions from a paint having good diffusing properties, the eye is not conscious of glare; the brightness of such a surface appears equal from any angle of view. Shadows are luminous and soft.

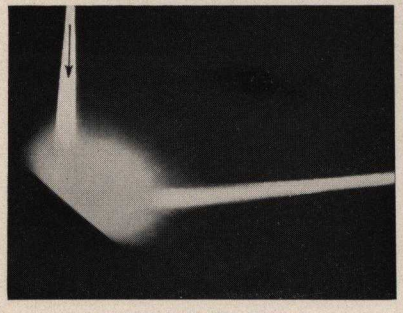
Interestingly enough, a diffusely reflecting flat or eggshell paint reflects as much or more light than a gloss paint. For painting walls and ceilings, therefore, the selection of gloss involves a compromise between maximum reflection and freedom from glare on the one hand and the greater durability and ease of cleaning of the higher gloss finishes on the other.

ACTUAL PHOTOS SHOWING REFLECTION OF LIGHT FROM DIFFERENT PAINT SURFACES



FLAT OR EGGSHELL WHITE PAINT

The total amount of light reflected is relatively large and is diffused evenly at all angles. There is no direct or specular reflection to cause glare.

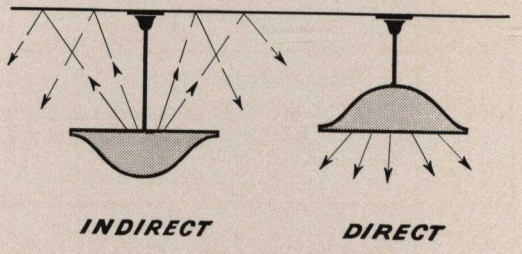


GLOSS WHITE PAINT

A portion of the light has been distributed evenly as diffuse reflection. The central beam of specular reflection at a well defined angle would cause glare. Picture illustrates a very high gloss paint. With lower gloss, specular reflection becomes less clearly defined.

WHITE PAINT AND INDIRECT LIGHTING

Indirect lighting is now widely used in offices and to an increasing extent in factory areas. With this type of illumination, 90% to 100% of the light is first directed upward to the ceiling and from the ceiling reflected diffusely throughout the room area. This, in effect, makes the ceiling area the light source and avoids the concentrated brightness of a direct lighting unit or enclosing globe. It provides an evenly distributed illumination of high quality, free from glare. Obviously, a white paint of the highest light reflecting value is of utmost importance with this type of lighting.



With direct lighting, all the light is directed downward. In the case of indirect lighting, the light is first directed upward toward the ceiling, then reflected downward by the ceiling to the working level below.

FLUORESCENT LIGHTING

The latest development in the field of artificial illumination is fluorescent lighting which produces light of good quality though the action of ultra violet radiation on the chemicals with which the light tube is coated.

The fluorescent lighting unit may be equipped with a reflector which directs all of the light downward or may be open at the top, permitting part of the light to be reflected by the ceiling. Here, again, a high light reflecting white paint is needed both to conserve that portion of light which is directed upward and to form a light colored background against which the lighting unit will not appear in objectionable contrast.

SAVE-LITE WHITE IN FOUR DEGREES OF GLOSS

1. Gloss
2. Semi-Gloss
3. Eg-Shel
4. Flat or Matte

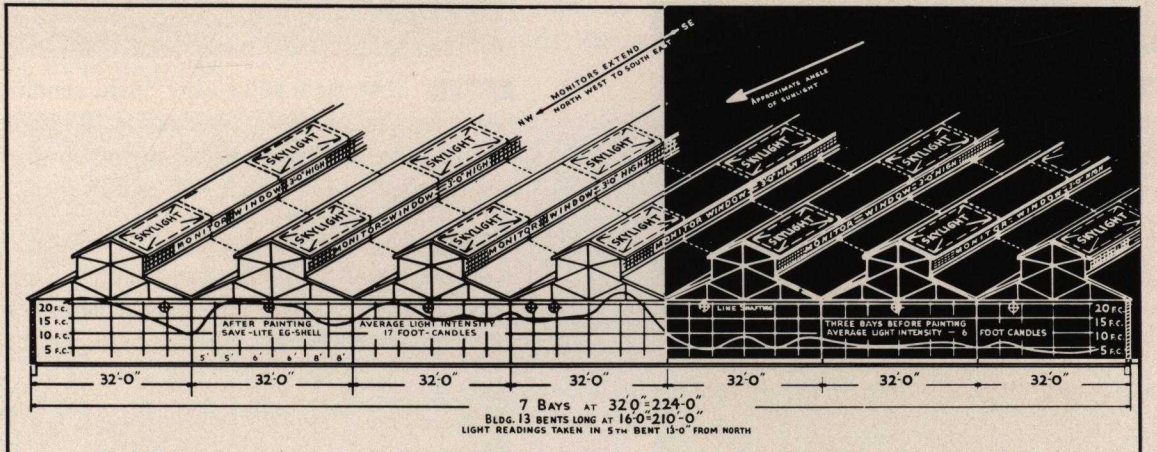
There are Save-Lite products in all four finishes. Regular Save-Lite is available in Gloss, Eg-Shel and Flat; Fume-Resisting Save-Lite in Gloss, Semi-Gloss and Flat; Kem Save-Lite and Kem Fume and Moisture-Resisting Save-Lite are manufactured in Gloss and Eg-Shel only.

In light reflecting value and ability to diffuse light, a flat white newly applied is probably superior. The Eg-Shel White finish approaches very closely the reflecting and diffusing power of the Flat, with the advantage of easier cleaning and greater durability. The Gloss and Semi-Gloss finishes are the most durable of all, are most highly resistant to moisture and are most easily cleaned. Walls painted with Kem Save-Lite Gloss White give an effect of gleaming beauty and spotless sanitation which no other finish produces.

With higher lighting standards and the use of modern forms of equipment, the better light-reflecting and diffusing properties of the Eg-Shel and Flat finishes are important considerations. A recent survey shows these finishes are gaining in popularity where moisture conditions and other hazards are not a factor.

A SAVE-LITE CASE HISTORY

PAINTED (Average 17 foot-candles) UNPAINTED (Average 6 foot-candles)


MONITORS EXTEND NORTH WEST TO SOUTH EAST
NW
SE
APPROXIMATE ANGLE OF SUNLIGHT
SKYLIGHT
MONITOR WINDOW 3'-0" HIGH
LINE SHAFTING
20 F.C.
15 F.C.
10 F.C.
5 F.C.
AFTER PAINTING SAVE-LITE EG-SHELL
AVERAGE LIGHT INTENSITY 17 FOOT-CANDLES
THREE BAYS BEFORE PAINTING AVERAGE LIGHT INTENSITY — 6 FOOT CANDLES
32'-0"
7 BAYS AT 32'0" = 224'-0"
BLDG. 13 BENTS LONG AT 16'-0" = 210'-0"
LIGHT READINGS TAKEN IN 5TH BENT 13'-0" FROM NORTH

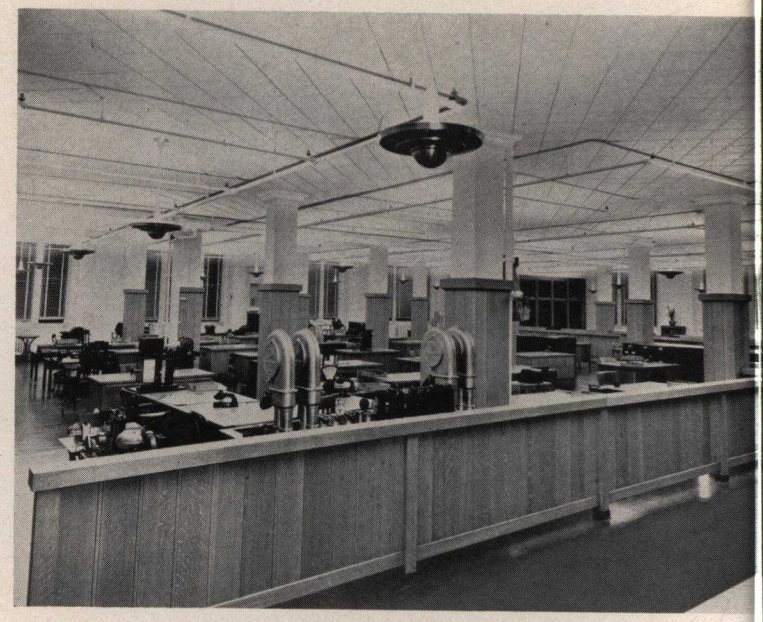
This light survey was made July 30th at 4:30 P. M. on a moderately clear day. The plant is used for production printing where good light is essential. Construction is uniform for the full cross-section of the building and all conditions at time of survey were identical. Four bays at left were painted with Sherwin-Williams Save-Lite Eg-Shel.

Location of overhead shafting indicated by small circles. The effect on illumination is evident from the graph.

The plant of the American Salesbook Company at Niagara Falls, N. Y., is a typical example of the effect of white paint in improving daylight illumination. A survey was made when the plant was about two-thirds painted and the light-meter readings were plotted to form a graph, as shown above. The left hand portion of the graph, representing the part of the plant which had been painted, shows an average of 17 foot-candles of light. At the right, the unpainted portion of the plant shows an average of only 6 foot-candles. All other conditions were identical; the increase from 6 to 17 foot-candles was due entirely to painting with Save-Lite.

BETTER LIGHT-
BETTER SIGHT WITH
SAVE-LITE WHITE

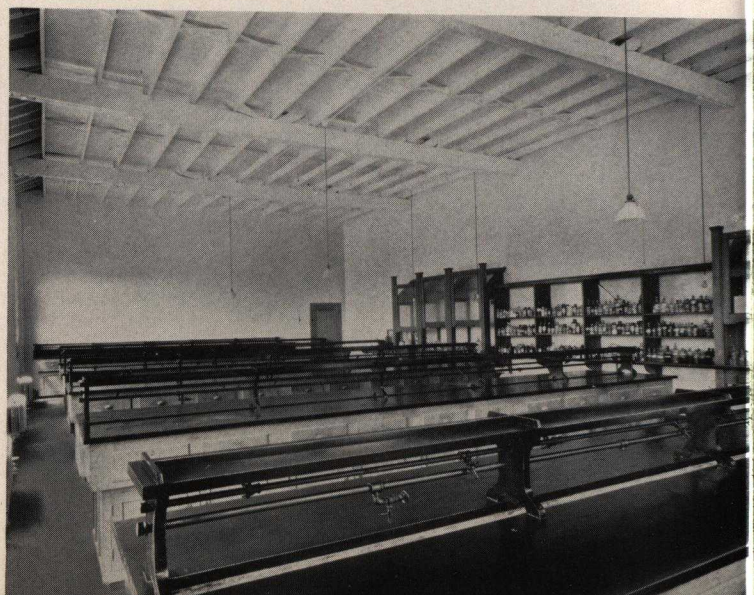
BEFORE Office of McKesson-Robbins, Inc., Omaha Division at Omaha, Nebraska. The light from the diffusing globes is harsh. Sharp shadows and dark areas are hard on the eyes. Illumination at the desk level is poor.



AFTER The same office after "light conditioning". Indirect lighting fixtures and Save-Lite White on walls and ceilings have eliminated glare, stepped up the illumination and supplied an evenly diffused light over the entire room.

BEFORE Actual photograph of chemistry laboratory at Allegheny College, Meadville, Pennsylvania. Fumes have blackened paint on walls and ceilings, reducing illumination to as low as 1 foot-candle at the working tables.

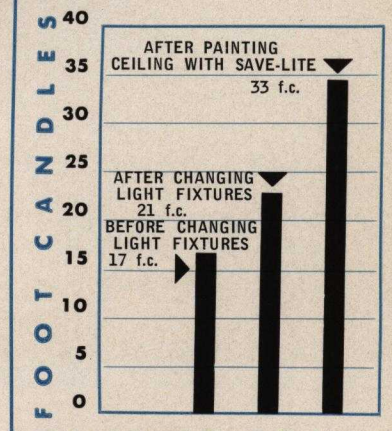
AFTER After repainting with Sherwin-Williams Fume-Resisting Save-Lite White, five times the illumination and an even distribution of light was achieved. An inspection 18 months later showed walls and ceiling in good condition.



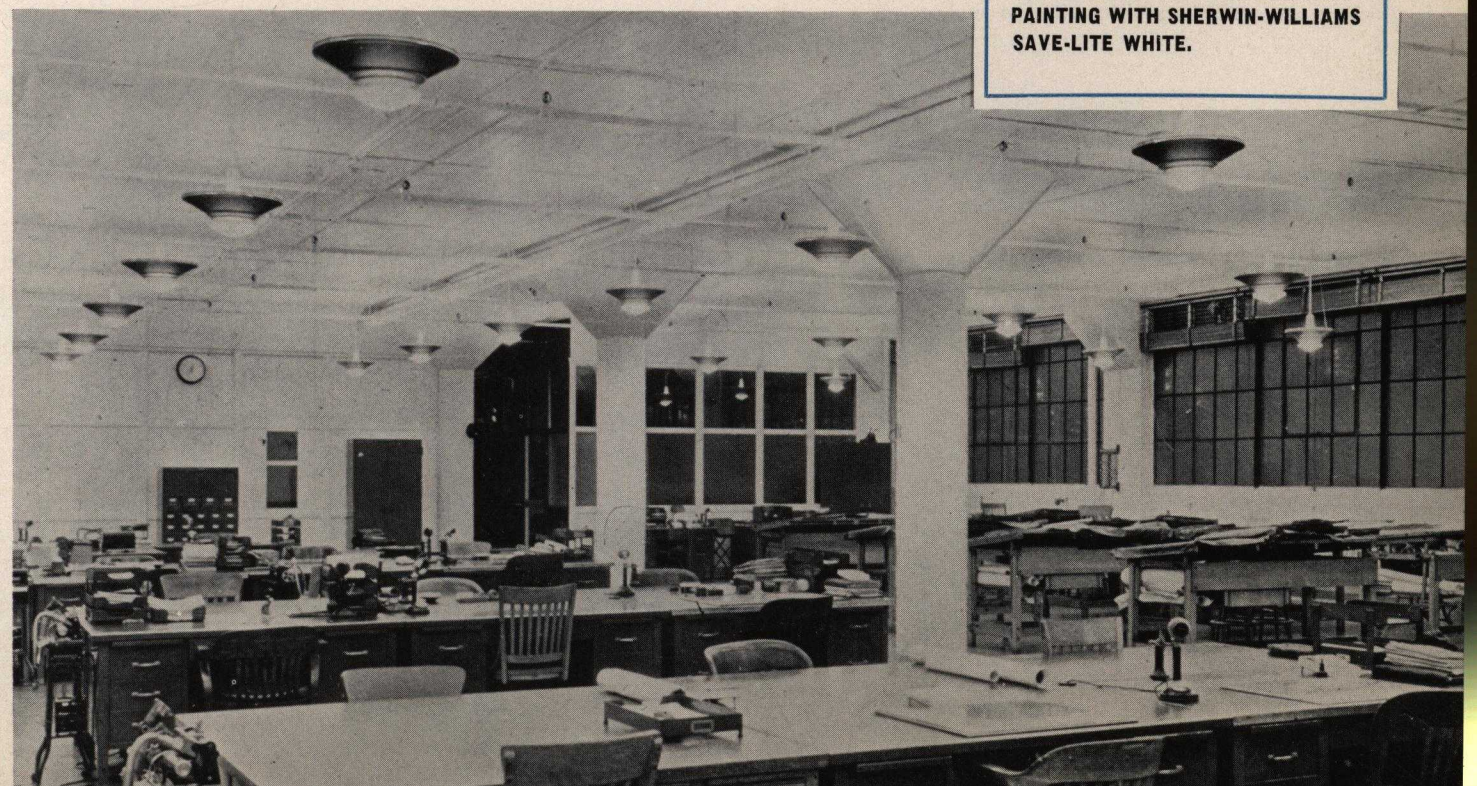
BEFORE (*above*) — Light-meter readings taken in this office of an important manufacturer of electrical equipment at Cleveland, Ohio showed only 17 foot-candles of light on the working surface.

AFTER (*below*) — The same office after the enclosing-globe type of light fixtures were replaced with semi-indirect equipment and the ceiling painted with Save-Lite Eg-Shel White. The change in light fixtures was accompanied by a stepping-up in the wattage of the lamps. With new fixtures and lamps but before painting, light-meter readings showed an increase of light to 21 foot-candles. After painting with Save-Lite, tests showed 33 foot-candles of light at the desk level. The total increase due to this light conditioning was from 17 foot-candles to 33 foot-candles, the increase from 21 to 33 foot-candles being due solely to painting with Save-Lite.

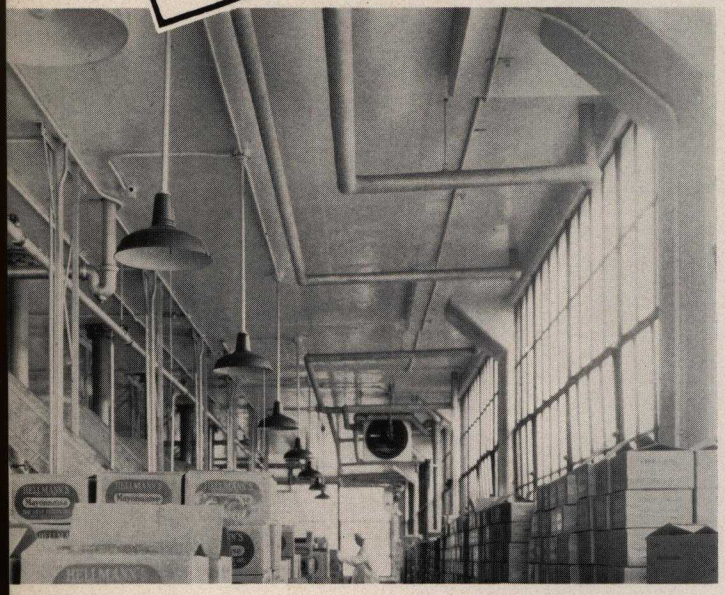
SAVE-LITE ON CEILING INCREASED LIGHT 57%



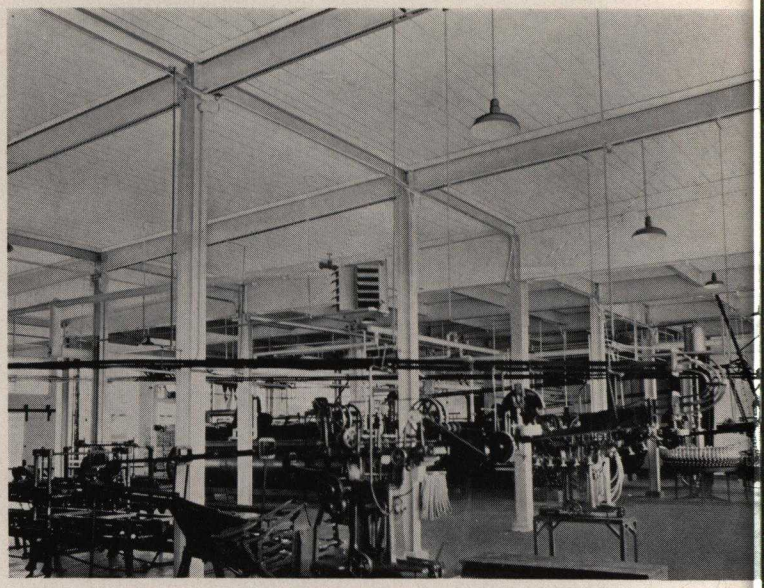
THE INCREASE FROM 21 TO 33 FOOT-CANDLES WAS DUE SOLELY TO PAINTING WITH SHERWIN-WILLIAMS SAVE-LITE WHITE.



KEM SAVE-LITE MAKES PLANTS MORE SANITARY . . . SAFER



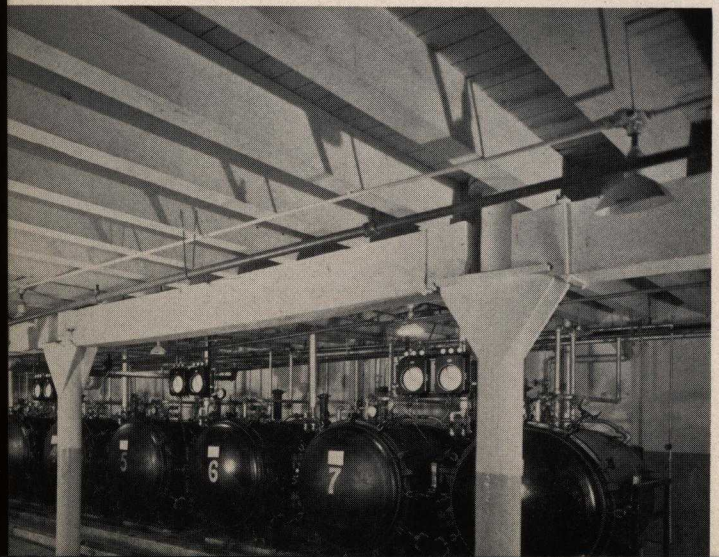
The Best Foods Company at Bayonne, N. J. has one of the industry's most modern plants. Walls and ceilings throughout are finished with gleaming white enamel making it possible to maintain the highest sanitary standards.



Nestle's plant at Greenville, Ohio, another noteworthy example of the sanitary standards maintained by the food industry. Kem Save-Lite's hard, tile-like, gloss finish is ideal for food industry requirements.

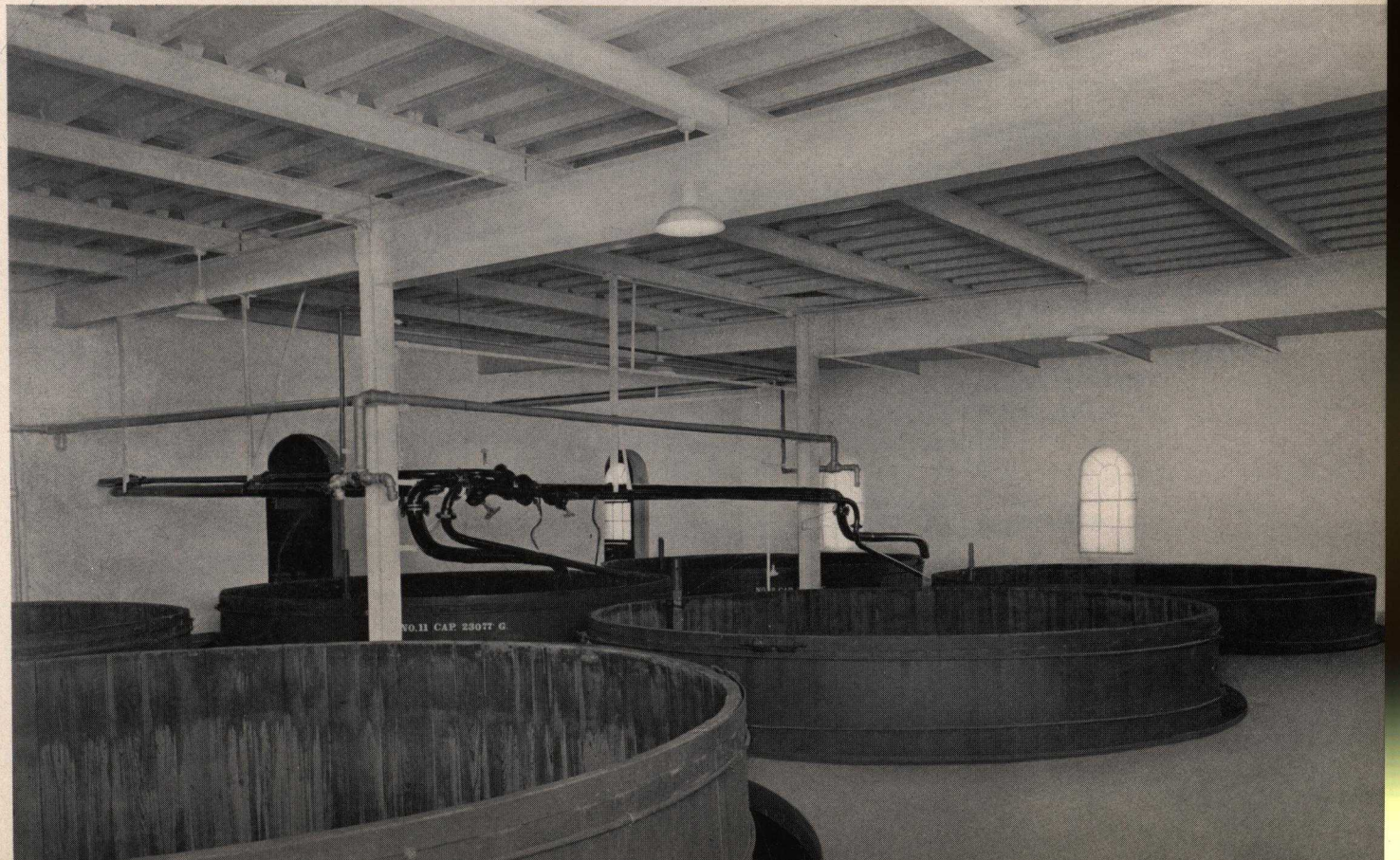
Part of the Wilson & Company plant in Chicago, another Save-Lite job. Kem Save-Lite White is sanitary, easily cleaned. It is also the most durable finish for food plants, particularly in the presence of moisture.

For greater light-reflection, lasting cleanliness as well as economy of application and maintenance, Doughnut Corporation of America, Ellicott City, Md., paints with Sherwin-Williams Save-Lite.



BEFORE (*above*) — Fermenting Room of A. Overholt & Co., Inc., at Broad Ford, Pennsylvania. The process of fermentation as well as the use of live steam for sterilizing the tanks results in moisture condensation on walls and ceiling. This condition is destructive to ordinary paints making it difficult to maintain the exceptionally high standard of sanitation established by this Company.

AFTER (*below*) — Same room after painting with Save-Lite Undercoater and Kem Save-Lite Gloss White. Cleanliness, resistance to fumes, moisture and mold made Kem Save-Lite the outstanding material for this job.



WHAT A WHITE PAINT SHOULD BE FOR YOUR PLANT INTERIOR

1. INITIAL WHITENESS

The highest possible initial whiteness is essential to maximum light reflection from a painted surface.

2. COLOR RETENTION

The ability of a paint to retain its light reflecting characteristics over a long period of time is dependent upon the knowledge and skill used in selecting and refining the oils, resins and driers used in making up the vehicle. Lasting whiteness is as important as initial whiteness.

3. OPACITY AND SPREADING

The cost of a painting job is determined as much by the area covered per gallon as by the price per gallon. Therefore, the hiding power and spreading qualities of a paint are important considerations.

4. APPLICATION

Since labor is the major cost in any painting program, a paint should be scientifically formulated and package-conditioned to insure the easiest possible application by brush or spray.

5. DRYING

Speed of drying is essential, as slow-drying paints may throw a department out of production for a considerable period while repainting is going on.

6. RESISTANCE TO SOILING

In every industry, the beauty of a paint finish may eventually be marred by the accumulation of dust and foreign substances. Moisture conditions and differences in surface and air temperatures tend to accelerate this accumulation. Because the new Kem Save-Lite is moisture-resistant, levels out to a smooth, continuous film, it is especially resistant to soiling.

7. WASHABILITY

Sanitary requirements in many plants make it necessary for painted surfaces to be washed frequently with soap and water. Tightness of film and freedom from brush marks make Kem Save-Lite not only impervious to soiling but remarkably easy to clean and wash. Its hard, tile-like surface will withstand repeated washings without noticeable damage.

8. FINISHES

Kem Save-Lite White is available in Eg-Shel and Gloss Finishes; also in a special Fume and Moisture-Resisting type. The Eg-Shel has a slightly higher light reflection value and gives an even diffusion of light. Kem Save-Lite Gloss is a full enamel, producing the most sanitary and handsome finish it is possible to manufacture. Both Kem Save-Lite Eg-Shel and Gloss will cover many surfaces solidly in one coat although an extra coat of Save-Lite Undercoater is recommended for unpainted surfaces and for use under the special Fume and Moisture-Resisting Finishes.

9. RESISTANCE TO SPECIAL CONDITIONS

Acid Fumes and other chemicals, heat and moisture conditions all constitute a severe test in the life of any paint. Kem Fume and Moisture-Resisting Save-Lite is the plant conditioning paint to meet these exacting requirements.

10. ECONOMY

Formulated especially for industry, Save-Lite is the economical white paint to use. All of its qualities assure you not only longer paint life but reduced painting costs. Labor costs usually constitute about 75% of the expense on industrial maintenance jobs. Both Regular and Kem Save-Lite Whites apply easily, require fewer coats and give lasting service. They protect your investment against the ravages of rust and deterioration, and increase operating efficiency by improving the lighting in your plant.

KEM SAVE-LITE REMAINS WHITE

A study of the causes of white paint "yellowing" is typical of the research work constantly being done in Sherwin-Williams Laboratories. In this work, paints are tested to determine their ability to reflect each of the colors of the spectrum. Chart No. 1 shows light reflectance curves for a White, a Light Buff, and a Deep Yellow Paint. The curves indicate the reflective power of each paint through the full range of the visible spectrum. A truly white surface would reflect all colors equally and its curve of spectral reflectance would be a horizontal line. However, a simple mixture of white pigments and oil is almost invariably low in reflectance for Blue; higher in Yellow and Red. For this reason, it may appear to the eye to be Ivory rather than White. Furthermore, a natural white paint of this type loses its reflectance for Blue more rapidly than reflectance for other colors. Hence, as time goes on, the curve of spectral reflectance becomes lower and lower at the Blue end. The result — eventual yellowing. To correct this condition, the paint manufacturer may add Blue pigment to the white paint to make it appear whiter to the eye and to neutralize the yellowing effect.

On Chart #2 may be seen what actually happens when Blue pigment is added to a white paint. Strangely enough Blue pigments are not particularly effective in reflecting Blue light. They appear Blue to the eye because they are such poor reflectors of Yellow and Red. Therefore, adding Blue pigment to a white paint produces a more nearly horizontal curve not by increasing reflectance for blue but by *decreasing* reflectance for Red and Yellow. Obviously, this procedure lowers the over-all ability of the paint to reflect light.

Sherwin-Williams research has been directed toward the development of a white paint that requires a minimum addition of Blue pigment — in other words, the production of a natural white which, right from the start, will give uniformly high reflectance for all colors.

On Chart #3, are shown spectral distribution curves of the new Kem Save-Lite and an ordinary White. Note how Kem Save-Lite reflects all colors approximately alike. Note, too that its over-all average light reflection is exceptionally high — 90.8% (compared with magnesium oxide, assumed 100%).

Even though some depreciation in reflectance should occur, Kem Save-Lite White will show no noticeable tendency to become Yellow and throughout the life of the film will retain an unusually high light reflecting power.

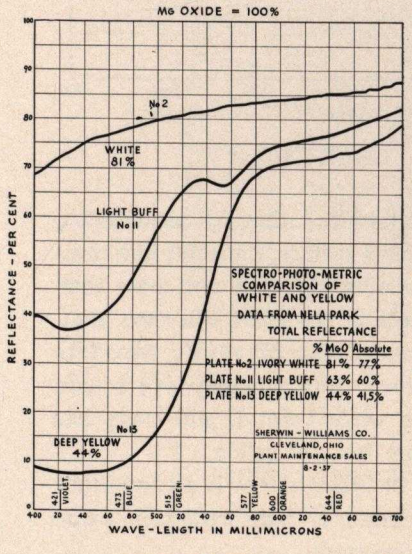


CHART NO. 1

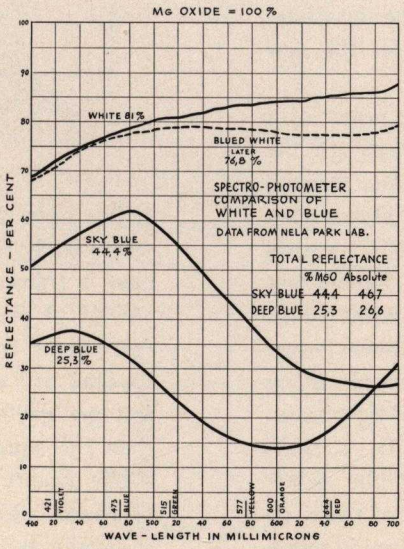


CHART NO. 2

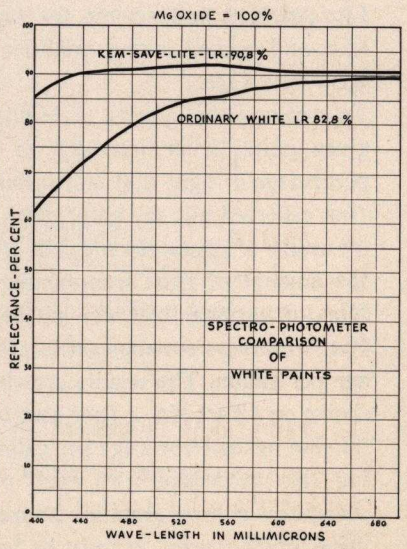


CHART NO. 3

Spectro-photometer Graphs from Nela Park Laboratories, Cleveland, Ohio, and Massachusetts Institute of Technology, Boston, Mass.

SAVE-LITE WHITENESS IS CONTROLLED!

Three factors determine the superiority of one interior white paint over another — opacity as a measure of hiding power; light reflection as a measure of whiteness; and color retention as a measure of durability. The first two, opacity and light reflection, form the basis for determining coverage per gallon. For, obviously, with any given white paint the thicker the film of paint we apply the greater will be the hiding power and the greater will be the light reflection value. The truly economical paint, then, is the one that gives the greatest coverage per gallon together with maximum light reflection and opacity.

Sherwin-Williams technicians measure opacity and light reflection accurately, determine exactly how well a paint will cover and how effective it will be as an aid to illumination. Studies such as those shown have played an important part in the development of all Save-Lite products and explain the superior whiteness and money-saving qualities of the new Kem Save-Lite.

To measure the opacity or hiding power of a given paint, it is necessary to measure the percentage of light that is *transmitted* through (not reflected by) the paint film. This is done by means of photo-electric cells which measure the amount of light transmitted through test films of varying thickness of the same paint. Each thickness corresponds to a known coverage per gallon. The results are then plotted as shown on Chart No. 4 (per-cent of light transmission against coverage per gallon). Repeating this procedure with each of the paints under test gives a graphic picture of their relative hiding power. It must be borne in mind, however, that the curves actually measure *light transmission* which is the reverse of opacity and, therefore, the paint with the curve lowest on the chart has the highest opacity rating.

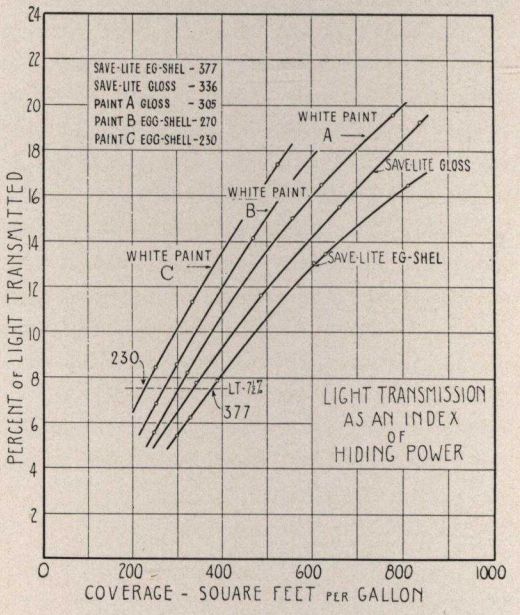


CHART NO. 4

It has been determined that for good hiding over a badly soiled surface, the paint film must have a transmission factor of not more than 7½%. A glance at the chart will show that, for a light transmission of 7½%, Save-Lite Eg-Shel will cover approximately 375 square feet per gallon while Paint C will cover less than 250 square feet per gallon.

While opacity or hiding power is an important attribute, whiteness or light reflection value is equally as important.

Chart No. 5, therefore, must be drawn in order to establish the relative performance of the various "white" paints as reflectors of light.

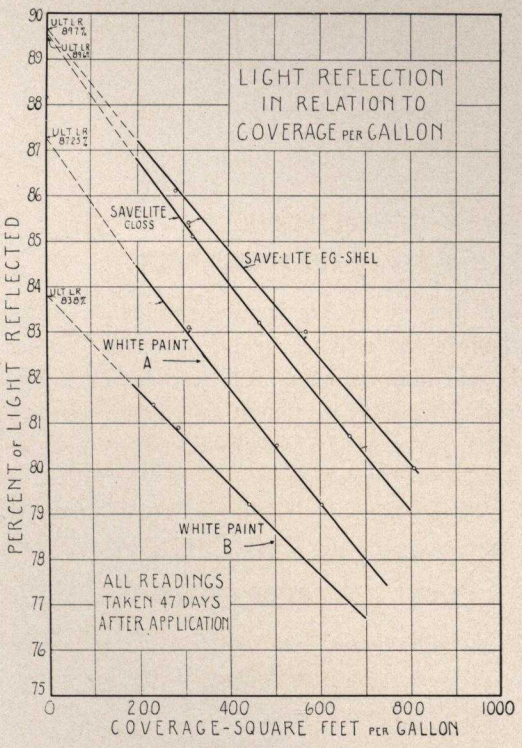

LIGHT REFLECTION IN RELATION TO COVERAGE PER GALLON
SAVELITE GLOSS
SAVE-LITE EG-SHEL
WHITE PAINT A
WHITE PAINT B
ALL READINGS TAKEN 47 DAYS AFTER APPLICATION
PERCENT OF LIGHT REFLECTED
COVERAGE-SQUARE FEET PER GALLON

CHART NO. 5

The method of measuring light reflection as related to coverage per gallon is similar to that employed in the study of light transmission (chart No. 4). Here, however, the paint whose curve is *highest* on the chart is superior since its light reflection value is highest for any given coverage per gallon.

Save-Lite, it will be seen, has the lowest light transmission and the highest light reflection of all the paints included in this study — unquestionable proof of its superiority and economy.

The ability of a paint to remain white is the final measure of its usefulness as an interior finish.

Chart No. 6 compares the color retention of a number of white paints all based on a coverage of 300 sq. ft. per gallon. The light reflection value of each paint was measured immediately after application and similar readings taken for a period of a year. These readings were then plotted (light reflection value against elapsed time in days) and a curve drawn to represent the performance of each of the paints studied. The significance of these comparisons lies in the fact that even at the end of a year, both Save-Lite products showed a light reflection value approximately 80%, and at all times were superior to any of the other paints so tested.

Scientific methods such as these enable Sherwin-Williams engineers to control the performance of all Save-Lite products and to keep Save-Lite the outstanding white paint for plant and office maintenance.

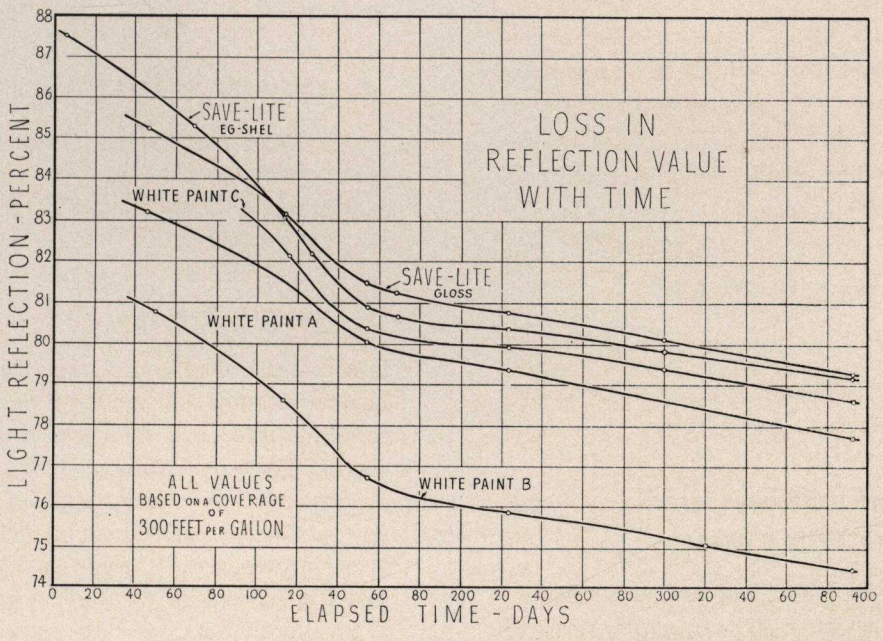

LOSS IN REFLECTION VALUE WITH TIME
SAVE-LITE EG-SHEL
WHITE PAINT C
SAVE-LITE GLOSS
WHITE PAINT A
WHITE PAINT B
ALL VALUES BASED ON A COVERAGE OF 300 FEET PER GALLON
LIGHT REFLECTION-PERCENT
ELAPSED TIME - DAYS

CHART NO. 6

Light Reflection and Transmission Graphs from Sherwin-Williams Laboratories.

KEM SAVE-LITE HAS THESE CHARACTERISTICS

. . . AND THEY ARE THE MODERN FEATURES PLANT ENGINEERS DEMAND IN A MILL WHITE

1. IT IS WHITER THAN EVER BEFORE

The high opacity Sherwin-Williams pigments used in Kem Save-Lite make it the whitest white paint. Exact laboratory measurements prove the superior whiteness of Kem Save-Lite.

2. IT STAYS WHITE

Even more important than its initial whiteness is the fact that Kem Save-Lite remains white. Again this new combination of synthetic vehicle and high opacity pigments produces a new and greatly improved vitality in paint.

3. IT COVERS WITH ONE COAT

Because of its very high opacity, Kem Save-Lite will give satisfactory results with one coat on most surfaces to be repainted.

4. IT DRIES HARD OVER NIGHT —TO TOUCH IN 5 HOURS

With Kem Save-Lite, the ordinary time required for drying has been greatly reduced through the use of fast-drying synthetic resins.

5. IT IS AVAILABLE IN GLOSS OR EGG-SHELL FINISH

Full gloss for easier cleaning and maximum resistance to moisture in Food Plants, Textile Weave Rooms, Paper Mills and the like. Eg-Shel Finish for maximum light reflection and diffusion where the ultimate in moisture resistance is not required.

6. IT HAS A VERY HIGH LIGHT REFLECTION FACTOR

Tests show Kem Save-Lite to have extremely high light reflection value — possibly the highest of any white paint.

7. IT IS HARD—TILE-LIKE

On drying, Kem Save-Lite presents a hard, tile-like surface that is easily cleaned and will withstand repeated washings without damage to the finish.

8. IT IS EASY TO APPLY

Even with its quick-drying property and high opacity, the new Kem Save-Lite is one of the easiest paints to apply that Sherwin-Williams has ever produced.

9. THE NEW KEM SAVE-LITE . . .

Is a product designed to meet the important requirements of industry for a durable, white paint for interior walls and ceilings. Due to its high light-reflecting properties and ability to remain white, Kem Save-Lite is an important aid to better illumination. Furthermore, by reason of its exceptional opacity and covering power, its washability and ease of application, Kem Save-Lite is the most economical white paint for your plant.

KEM SAVE-LITE IMPROVEMENTS TRANSLATE TO THESE COST-CUTTING FACTS

1. QUICKER DRYING

Quicker Drying means faster resumption of production; makes possible painting during week-end shutdowns with resulting savings that may in some instances run into hundreds of dollars on a single painting operation.

2. ONE COAT COVERS

One Coat Hiding—means big savings in cost of paint—bigger savings in cost of painting. In any maintenance painting operation, labor costs far exceed the cost of materials. Whenever one coat can take the place of two, the resulting savings in labor costs are appreciable.

3. STAYING POWER

The Staying Power of Kem Save-Lite's whiteness means less frequent painting and lower maintenance cost. Throughout the useful life of the film, Kem Save-Lite will retain an unusually high light-reflecting power.

4. WASHABILITY

The Washability of Kem Save-Lite White doubles the useful life of the paint job, permitting washing to take the place of repainting.

5. LIGHTING EFFICIENCY

Light Efficiency will be greatly increased both in daytime and at night. With Save-Lite on walls and ceilings you make full utilization of reflecting surfaces, get more and better light for any given current consumption.

6. SEEING IS EASIER

Seeing is easier, eye-strain is lessened when Save-Lite White reflects all possible light from the ceiling. The saving in sight is the most important of all advantages—even more than the dollars and cents saved in so many other ways.

7. SAFETY

Every possible bit of light is needed to insure maximum safety in plant operations. Save-Lited walls and ceilings are definite safety measures, aid materially in obtaining a lower accident rate.

8. WORKMANSHIP

Good workmanship is easier and all phases of it enhanced when light is properly and fully used—as it is when reflected from walls and ceilings that have been painted with Sherwin-Williams Save-Lite White.

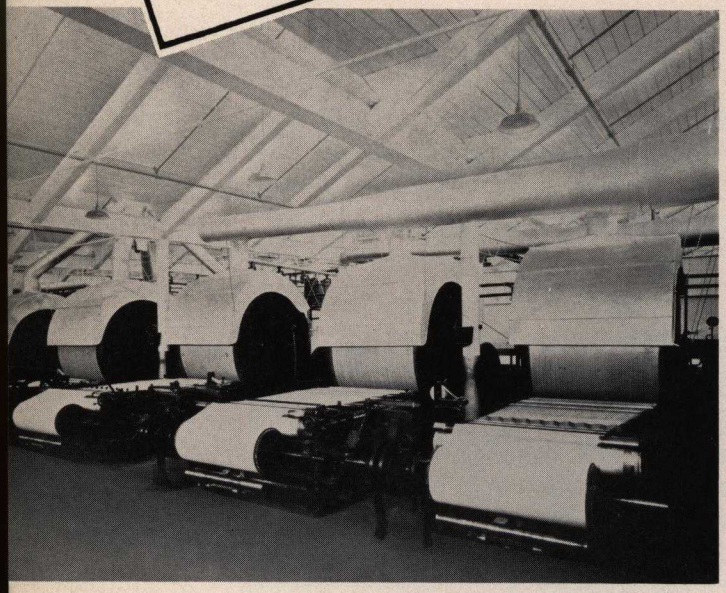
9. REJECTIONS

Experience has proved that rejections are often greatly lowered when a plant is repainted with Save-Lite White. Seeing and working conditions are so much better—better work is the natural result.

10. UNIT COSTS

It takes time to see. Authoritative tests indicate that an increase in illumination from 1 foot-candle to 20 foot-candles will increase the speed of seeing approximately 3 times. Faster seeing in a Save-Lited plant saves time, increases production, lowers unit costs.

THEY IMPROVED PRODUCTION . . . CUT COSTS WITH SAVE-LITE

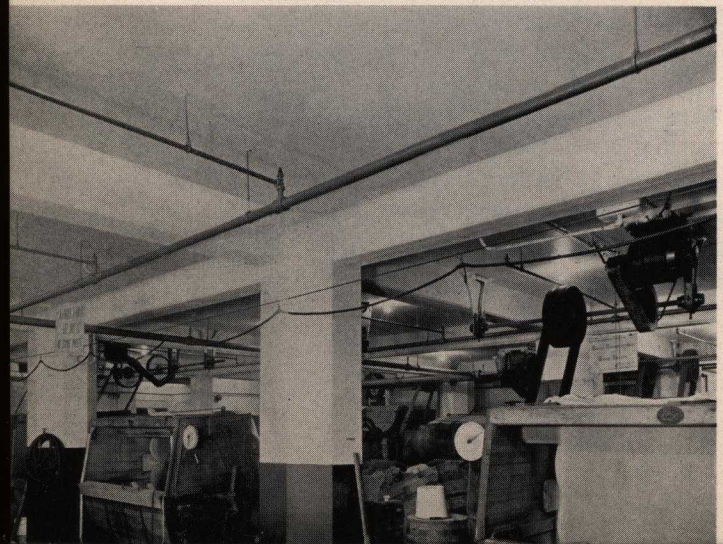


Slasher room, Appleton Mills, Anderson, S. C. This room presents a severe fume and moisture condition, due mainly to steam from the sizing tanks in which the warp is treated. Sherwin-Williams Save-Lite White was selected for use on walls and ceiling.

Laundry room of the North Star Woolen Mills, Minneapolis, Minn., after painting with Kem Save-Lite Gloss White. Excessive moisture, fumes, soap — all these are hazards which only a paint of the superior qualities of Kem Save-Lite will withstand.

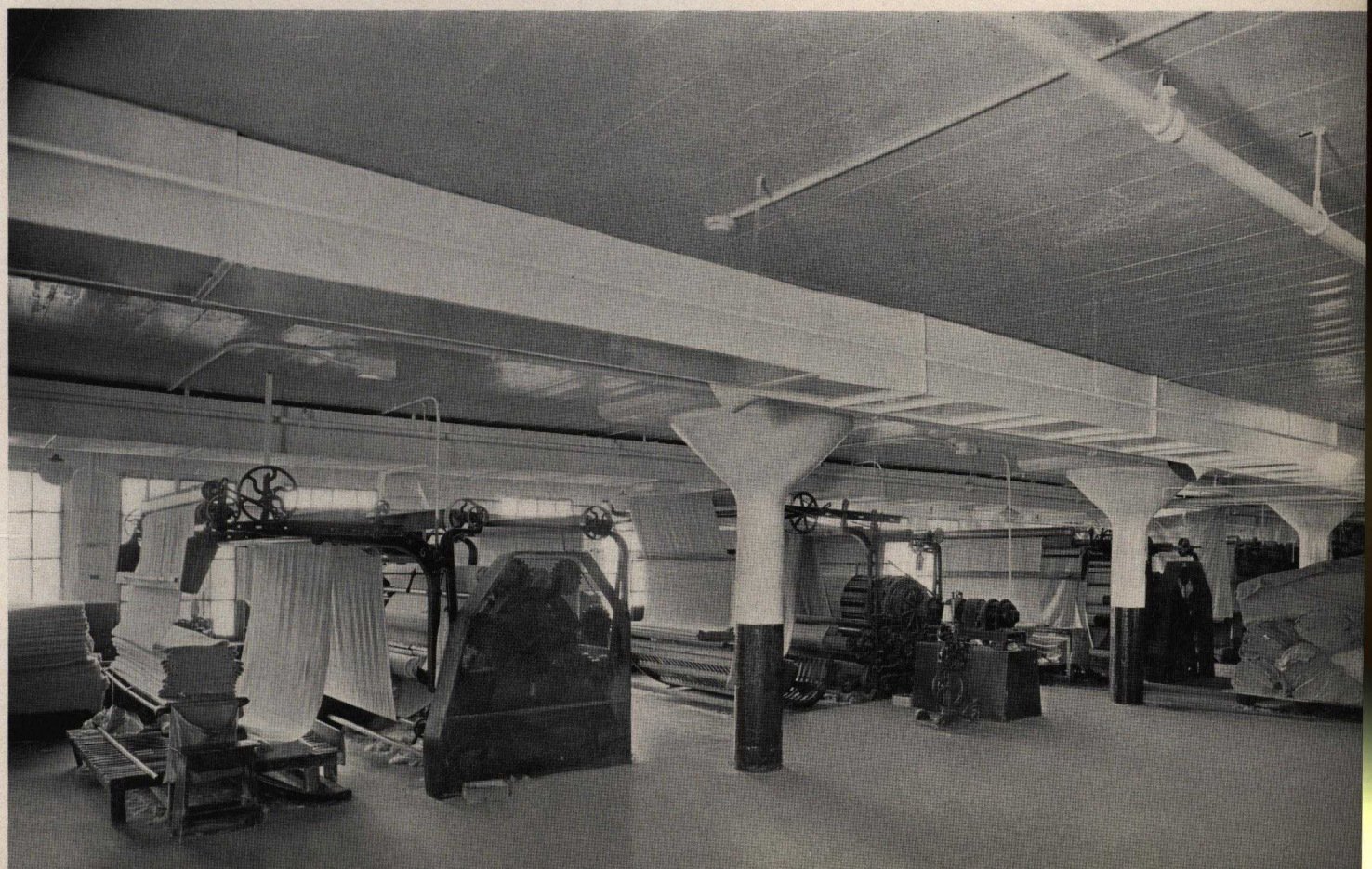
Weave room, Stone-Cutter Mills, Spindale, N. C., painted with one coat of Save-Lite Undercoater and one coat of regular Save-Lite Gloss. Weave rooms often present serious mildew problems, in which case, moisture-resistant, washable Kem Save-Lite is the ideal paint to use.

The final stage in the manufacture of paper, the Finishing Room. Here the combination of Save-Lite Eg-Shel and daylight results in illumination of a very high order. In the Machine Room and the Beater Room, Kem Save-Lite Gloss performs an equally important role.

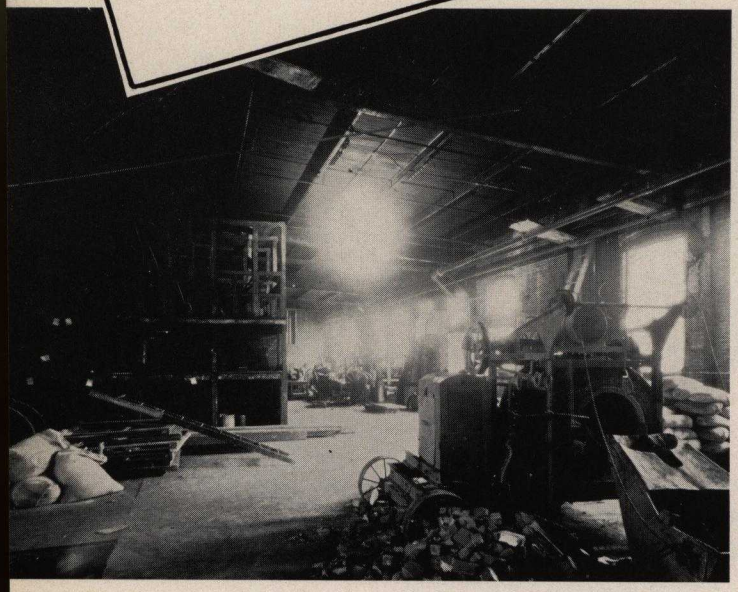


BEFORE (*above*)
Nappier Room of the North Star Woolen Mills, Minneapolis, Minn., poorly illuminated in spite of both daylight and artificial light.

AFTER (*below*)
The same room after painting, showing a remarkable transformation and increase in general illumination that was accomplished with but one coat of Kem Save-Lite Gloss White. Kem Save-Lite's whiteness and exceptional hiding power make it the ideal white paint for one-coat work.



SPECIAL PAINTING PROBLEMS SOLVED WITH SAVE-LITE



BEFORE Warehouse of American Stove Company, at Lorain, Ohio. Photo taken about 3:00 P.M. on February 25th. Room was so dark a long exposure was required. Note resulting glare around electric light.

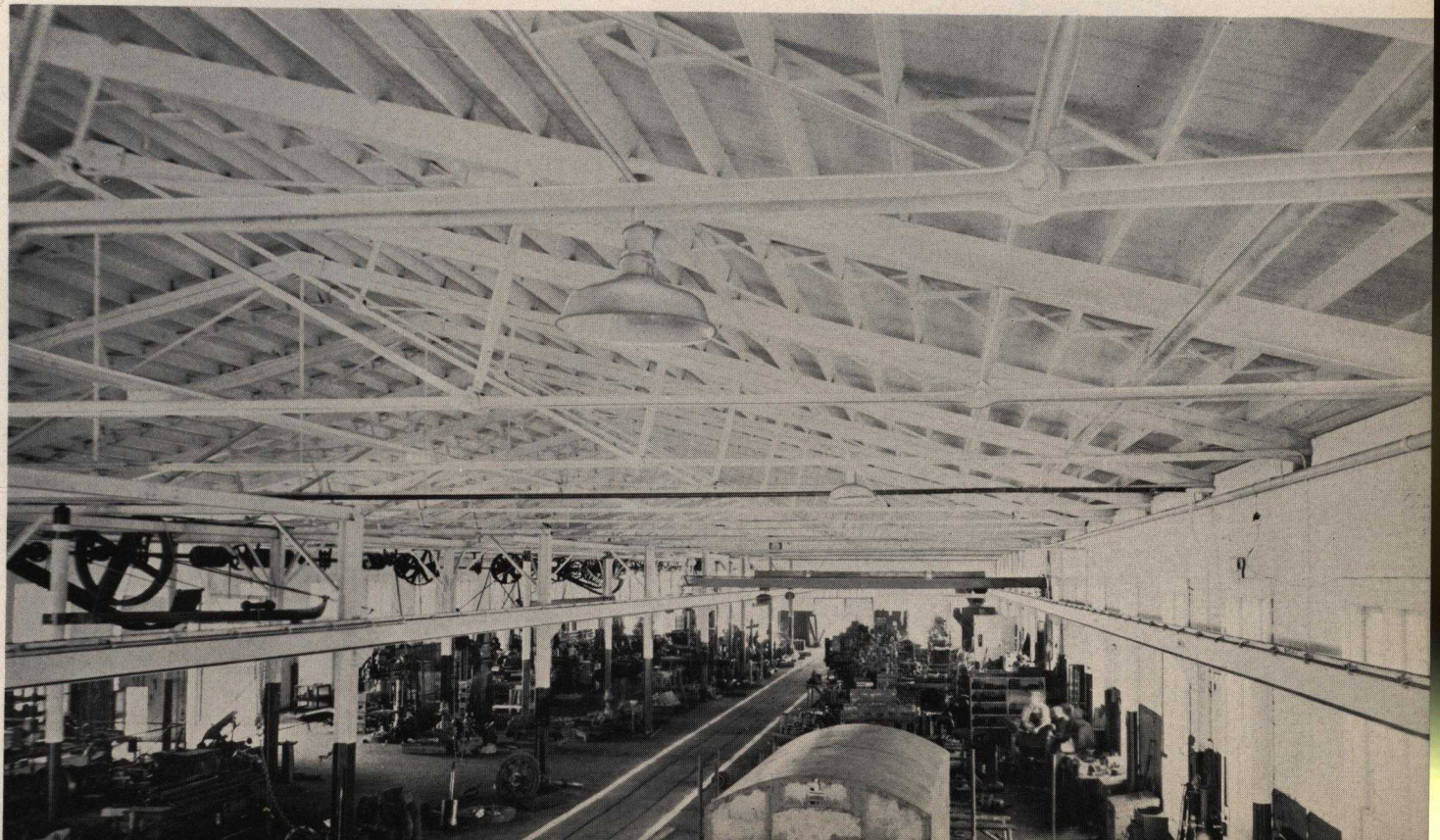
AFTER Photo taken from same spot after remodeling and painting with Save-Lite White. Note increased illumination and even diffusion of light. Photo taken 2:30 P.M. on March 12th, with considerably less exposure.

BEFORE Foundry of American Malleable Castings Co., at Marion, Ohio. Photo taken on brilliant sunshiny day. Area near left wall so dark it was impossible to obtain an appreciable reading on light meter.

AFTER Photo taken after painting with Sherwin-Williams Save-Lite. The use of Save-Lite on walls and ceiling has resulted in uniform distribution of daylight and usefulness of walk-way and working area at left.

BEFORE (*above*) — Plant of the Bridgeport Machine Company of Wichita, Kansas. Note the dark areas in the foreground, deep shadows and generally poor illumination.

AFTER (*below*) — Same interior after painting with Save-Lite White. In addition to increasing light, Save-Lite here serves another purpose. The owner has wisely elected to paint the overhead structural frame work white to blend in with the white ceiling. As a result the apparent ceiling line has been raised and the plant has been given a feeling of added roominess.



THERE'S A SAVE-LITE WHITE FOR EVERY INDUSTRIAL USE . . .

The Sherwin-Williams Company realizes that all the requirements of industry cannot be met by a single product however excellent. Special fume conditions may be encountered that require a special type of finish. And in other cases, circumstances may be such that speed of drying and exceptional covering power are not essential to the work in hand.

For these reasons, Sherwin-Williams furnishes four types of Save-Lite White Finishes, each particularly suited to certain fields. In each type a choice is offered as to degree of gloss, depending upon the specific circumstances.

REGULAR SAVE-LITE

This is the slower-drying oil-type Save-Lite which has proved its usefulness through many years of successful performance in industry all over the land. Supplied in Flat, Eg-Shel and Gloss, regular Save-Lite White provides at moderate cost the quality features of splendid color-retention, ease of application and brilliant whiteness.

FUME-RESISTING SAVE-LITE

Where chemical fumes are encountered, a product is required that will be inert to chemical action and will retain its whiteness under these adverse circumstances. Fume-Resisting Save-Lite in Flat, Semi-Gloss or Gloss supplies the answer here.

Fume-Resisting Save-Lite White is also heat-resisting and in atmospheres where moisture condensation is not a factor, can be relied upon to give trouble-free performance in laboratories, rubber plants, glass plants and allied industries.

KEM SAVE-LITE

The last word in the chemistry of white paints — hiding power that enables one coat to do the work of two, over-night drying, intense whiteness, choice of Gloss or Eg-Shel finish, a durable, tile-like film and color retention beyond any normal requirement — all these are plus factors which make Kem Save-Lite White outstanding in its field. Ideal for paper mills, textile weave rooms and plants where durability is of utmost importance. Also for manufacturers of food products, beverages, bottling houses, and the like where a sanitary finish, resistant to moisture and mold, is required.

KEM FUME AND MOISTURE RESISTING SAVE-LITE

Until very recently, the paint chemist has been unable to produce a white finish which would resist both fumes and moisture. However, careful research by Sherwin-Williams laboratories has led to the development of Kem Fume and Moisture Resisting Save-Lite, which is available in both Gloss and Eg-Shel finish. It is highly resistant to chlorine, sulphur, ammonia and other chemical fumes; holds its color at elevated temperatures, and in addition is exceptionally moisture-resistant.

For textile dye rooms, paper mill bleaching, bakeries, chlorine plants and other specialized types of industry, Kem Fume and Moisture-Resisting Save-Lite makes possible the use of the light-saving properties of a white finish with reasonable assurance of durability.

SHERWIN-WILLIAMS ADVISORY SERVICE

The selection of the proper paint to meet specific conditions requires experience and judgment.

Sherwin-Williams gladly offers the services of its trained staff without obligation. On your request, an experienced industrial representative will make a thorough technical examination of the work to be done and submit complete recommendations.

Where required, special investigations and tests will be run.

Sherwin-Williams Branch and factory points are distributed throughout the United States, making it possible to give prompt and efficient technical service, regardless of the location of your plant.

CHECK THESE PAINTING-FOR-PROFIT POINTS

1.

Have you taken actual foot-candle readings of the illumination in your various departments? How do they compare with the recommended standards appearing on pages 25 and 26?

2.

Have you ever compared the production rate and quality of workmanship in a department where seeing conditions are ideal with one poorly lighted, by transferring men from two departments and recording results?

3.

In striving for even light distribution, are you taking advantage of the reflection values of paint? Do you know that soiled walls and ceilings may reflect only 10% to 45% of the light falling upon them?

4.

Have you checked all stairs, hallways, manufacturing and handling departments to determine where white paint or light tints may be utilized to increase safety by increasing visibility?

5.

Have you centralized responsibility for plant housekeeping to stimulate neatness and improve employee morale? Have you rounded floor corners and other dirt havens and painted them white to discourage littering?

6.

Is personal hygiene of workers promoted by properly painted washrooms and locker rooms, as well as a well-kept plant?

7.

Do your employees complain of eye-strain and headaches? Have you provided ample light? Have you eliminated glare by eliminating contrasts with dark backgrounds, by using light indirectly reflected from walls and ceilings, and by properly shielding the light sources?

8.

Have you set up a classification of departments according to specific conditions, to enable you to choose interior paints with respect to acid fumes, alkali, moisture, or excessive heat?

9.

Are your basements, corridors, tunnels and other passageways subject to the effect of moisture from behind? Have you tried specifying porous types of paint to avoid peeling?

10.

Are inspection errors or product rejections a particular problem? If so, does the type of illumination and the color of your reflecting surfaces make color discrimination, seeing and inspection difficult?

11.

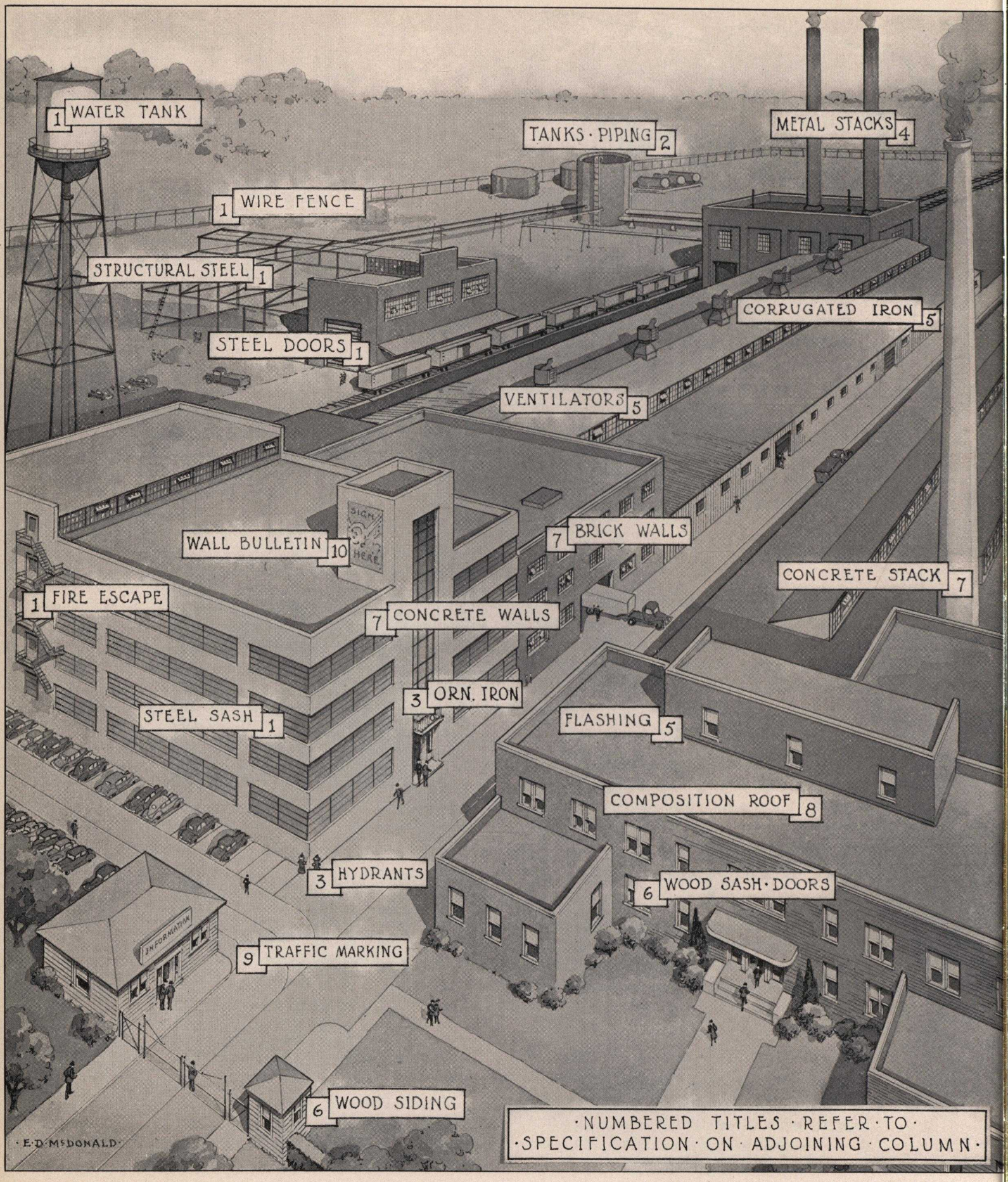
Where processing requires large open tanks, or printing rolls, where textile materials are exposed, does the proper painting of your walls and ceilings reduce the possibilities of foreign substances falling into or damaging materials?

12.

Have you ever considered setting up an interior painting schedule which dovetails into slack periods of departments, so that interference with production is kept at a minimum?

13.

Have you set up a scientific wall cleaning and painting schedule by taking foot-candle readings to determine how quickly the manufacturing conditions in your plant cause soilage? Sherwin-Williams Paint Engineers can help you set up such a system.


1 WATER TANK
TANKS · PIPING 2
METAL STACKS 4
1 WIRE FENCE
STRUCTURAL STEEL 1
CORRUGATED IRON 5
STEEL DOORS 1
VENTILATORS 5
WALL BULLETIN 10
SIGN HERE
7 BRICK WALLS
CONCRETE STACK 7
1 FIRE ESCAPE
7 CONCRETE WALLS
3 ORN. IRON
STEEL SASH 1
FLASHING 5
COMPOSITION ROOF 8
3 HYDRANTS
6 WOOD SASH · DOORS
INFORMATION
9 TRAFFIC MARKING
6 WOOD SIDING
· E · D · McDONALD ·
· NUMBERED TITLES · REFER · TO ·
· SPECIFICATION · ON · ADJOINING · COLUMN ·

THE SHERWIN-WILLIAMS CO. PAINTING GUIDE FOR INDUSTRIAL MAINTENANCE

EXTERIOR SPECIFICATIONS

1. **EXTERIOR METAL**
Structural Steel—Fire Escape
Water Tower and Tank—Metal Fence
Steel Sash—Steel Doors
Kem-Kromik Primer
Kem-Elastic Finish Coat
ALTERNATE
Kromik Primer No. 74
Metalastic Finish Coat

2. **TANKS & PIPING**
(*aluminum finish*)
Kem-Kromik Primer
Silverbrite Aluminum No. 429
ALTERNATE PRIMER
Kromik Primer No. 74

3. **ORNAMENTAL IRON**
(*enamel finish*)
Fire Equipment and Hydrants
Kem-Kromik Primer
Kem Lustral Enamel

4. **METAL STACKS**
High-Heat Brilliant Gray No. 45 *or*
Smokestack Black No. 15
Apply to bare metal without primer
(For stacks under 300° F. use Spec. No. 2)

5. **GALVANIZED IRON**
Corrugated Iron Roof and Siding
Gutters—Flashing—Ventilators
Industrial G & G Primer
Kem-Elastic Finish Coat

6. **EXTERIOR WOODWORK**
Wood Siding—Wood Sash and Doors
SWP Undercoater No. 450
SWP Prepared Outside Paint

7. **EXTERIOR MASONRY**
Brick and Concrete Walls
Concrete Stacks—Concrete Bins
2 coats Brick & Stucco Paint
First coat reduced 100% *with*
Brick & Stucco Mixing Seater

8. **COMPOSITION ROOF**
Ebonol or Liquid Roof Cement

9. **TRAFFIC MARKING**
Traffic Zone Paint

10. **WALL BULLETIN**
Kem Bulletin Colors

INTERIOR SPECIFICATIONS

11. **FACTORY WALLS & CEILINGS**
and Structural Steel—Trusses—Beams—
Columns—Steel Sash
**Save-Lite Undercoater*
Save-Lite Gloss, Eg-Shel, or Flat White

12. **WALLS & CEILINGS SUBJECT TO EXCESSIVE HUMIDITY**
Food Plants
Paper Mills
Wash and Toilet Rooms
**Save-Lite Undercoater*
Kem Save-Lite Gloss White

13. **LABORATORY WALLS & CEILINGS**
**Save-Lite Undercoater*
Kem Fume & Moisture Resisting Save-Lite Gloss White

14. **DADO**
2 coats Dado Enamel

15. **FACTORY FLOORS**
Wood or Concrete
2 coats Floor Enamel

16. **WOOD FLOORS**
(*natural finish*)
1 coat Floor-Seal (*penetrating varnish*)

17. **MISCELLANEOUS INTERIOR METAL**
Guard Railing—Metal Stairs—Piping
Radiators—Elevators—Partitions
Fire Apparatus—Lockers and Benches
Kromik Primer No. 74
Kem Lustral Enamel
(*On hot pipes and metal use Heat-Resisting Aluminum No.* 55 *without primer*)

18. **MACHINERY & EQUIPMENT**
Production Machinery—Power Plant Equipment
1 or 2 coats Kem Lustral Enamel

19. **OFFICE WALLS & CEILINGS**
First Coat—*Wall Primer & Sealer*
Second Coat
Walls—*Flat-Tone Wall Paint*
Ceiling—*Save-Lite Flat White*

20. **OFFICE TRIM**
Enameloid or Mar-Not Varnish

21. **OFFICE FLOOR**
Floor Enamel or Mar-Not Varnish

22. **DESKS & FURNITURE**
Mar-Not Varnish

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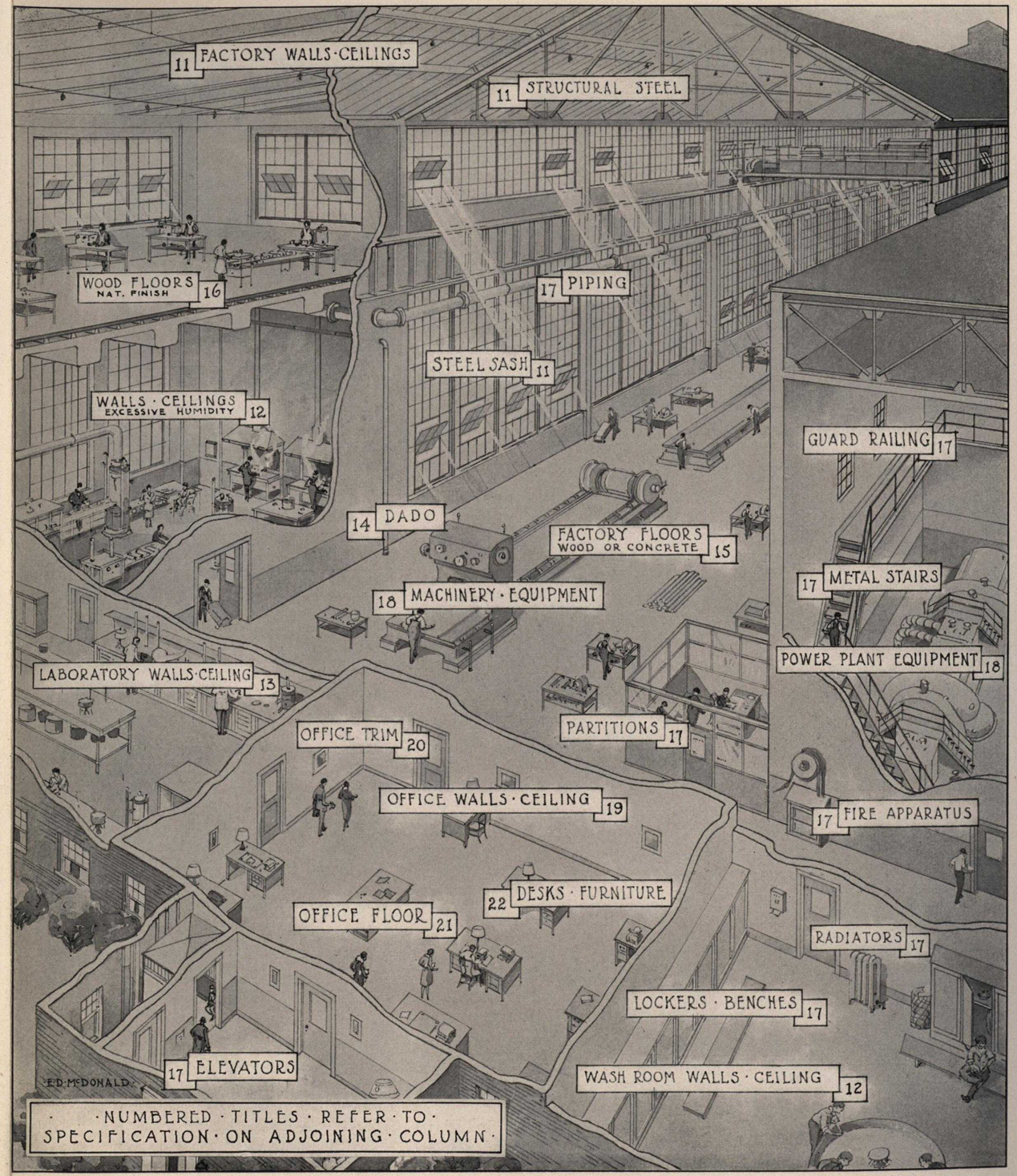

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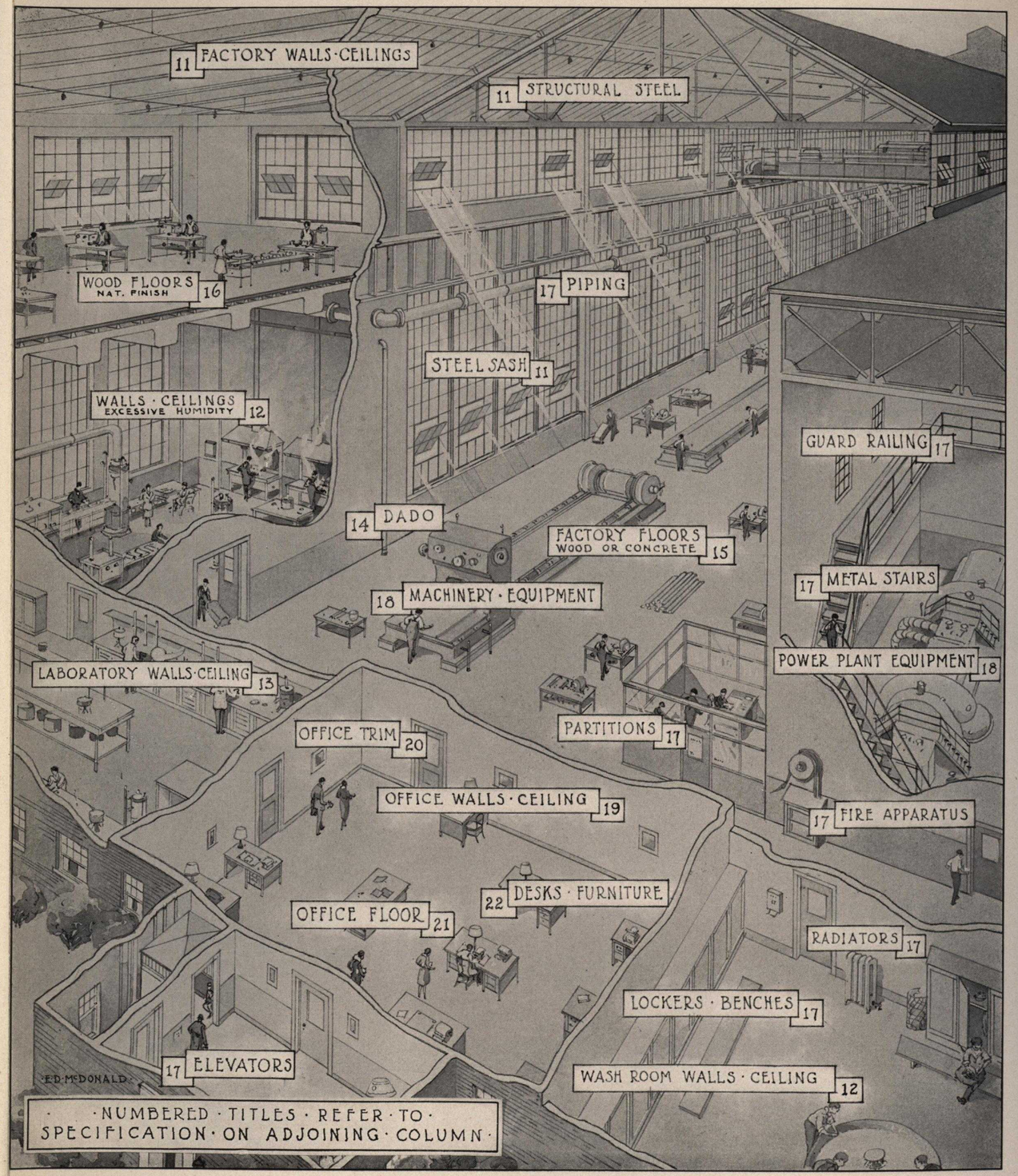
*Specification given is for repainting old work, also for new wood. On new brick, concrete, plaster, use Save-Lite Primer & Sealer as the first coat. Unpainted metal should be given a priming coat of Kem-Kromik Primer in addition to the coats specified. As an alternate, Specification No. 1 may be used on Structural Steel and Steel Sash.



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